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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/575,628

07/13/2006

Franck Zal

0508-1158

3891

466 7590 09/24/2009

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EXAMINER

MONSHIPOURI, MARYAM

ART UNIT

PAPER NUMBER

1656

MAIL DATE

DELIVERY MODE

09/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/575,628 | Applicant(s) ZAL ET AL. | |
| | Examiner Maryam Monshipouri | Art Unit 1656 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-30, SEQ ID NO:2-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-30, SEQ ID NO:1 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Applicant's response to restriction requirement filed 6/11/09 is acknowledged.

Applicant elected Group I, claims 1-30, drawn to methods of dissociating protein chains of *Arenicola marina*, methods of preparing primers and thereby coding DNA set forth as SEQ ID NO:1 and its expression product with traverse. All other inventions of Groups II-X, directed to methods of preparing other sequences are hereby withdrawn.

In traversal of restriction requirement applicant argues that that the inventions of Group I-X share a technical relationship involving one or more special technical features that define over the prior art. According to applicant SEQ ID NO:1, 3, 5, 7, 9, 11, 15 and 17 encode protein chains that are structurally and functionally related and should be examined together. In view of applicant, all proteins and nucleic acids set forth as SEQ ID NO:1-20, are directed to subunits of hemoglobin molecule and thus share structural and functional similarity. In addition SEQ ID NO: 5, 7, 9 and 11 are each structural variants of hemoglobin and are structurally similar to hemoglobin encoding chains. This fact is evidenced by use of an identical primer to amplify each gene.

Therefore, in view of applicant restriction among groups I-X should be withdrawn.

These arguments were fully considered but were found **unpersuasive**. Applicant is well aware that the term "similarity" is an ambiguous term. For example, in a way toxins and enzymes (or their respective coding DNA's) are similar because they are made out of amino acids and are both proteins. However, said products, even though similar are patentable over each other because of their mode of action and very specific structures.

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The issue here is not necessarily whether all SEQ ID NO:1-20 are "similar" but rather if they are patentable each over the other. In view of the examiner, even though most of said products are involved in making a hemoglobin molecule, said SEQ ID NO:1, 3, 5, 7, 9, 11, 15 and 17 are each patentable over the other because each subunit (or its encoding DNA) can exist on its own and can combine with variety of other subunits (or their coding DNA) to result in products that are functionally different than hemoglobin itself. Applicant is also fully informed that in Patent Law, a variant of a gene or polypeptide structure is usually patentable over either of said products. Therefore, the examiner would like to emphasize that in contrast to applicant's view, holding lack of unity among said sequences is proper and restriction is hereby maintained as previously indicated and is hereby made **Final**.

Upon further review of the previous office action further restriction deemed necessary as following:

Group I(a): claims 1-3, 15-16 are directed to chains and subunits of Atronicola marina hemoglobin encoded by SEQ ID NO:1 only and methods of preparing said products.

Group I(b): Claims 4-14, 17-30 are directed methods of preparing and using primers and methods of making cDNA encoding said hemoglobin chains or subunits.

The special technical features of Groups I(a-b) are: hemoglobin chain (subunit) and primers respectively, which are each totally different in both structure and function.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the

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requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maryam Monshipouri whose telephone number is (571) 272-0932. The examiner can normally be reached on Tues.-Fri., from 7:00 a.m to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Maryam Monshipouri/

Primary Examiner, Art Unit 1656